

7-2: Properties of Powers

Warm-up: A multiple choice quiz has two questions. For each question, there are three choices: A, B, and C. List all possible ways for a student to complete the quiz.

Is the possible number of ways 2^3 or 3^2 ?

Example 1: $3^2 \bullet 3^4$

Product of Powers Postulate:

Example 2: $(3^2)^4$

Power of a Power Postulate:

Example 3: $(x^2y)^3$

Power of a Product Postulate:

Example 4: $(3x^2y^3)^4$

Example 5: $\frac{10^{11}}{10^8}$

Quotient of Powers Postulate:

Example 6: $\left(\frac{x}{y}\right)^6$

Power of a Quotient Postulate:

Example 7: $\frac{x^3}{x^3}$

Let's look at this a different way:

Zero Exponent Theorem:

7-3: Negative Integer Exponents

Example 1: $\frac{x^7}{x^{10}}$

Let's look at this a different way:

Negative Exponent Theorem:

When we see a problem with exponents, we can apply the properties in ***any*** order. Make sure you apply as many of the properties as possible!

Example 2: $(5b)^3(4b)^{-5}$

Homework:

"Success is the sum of small efforts, repeated day in and day out." - Robert Collier